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Smith County, Tennessee
Solid Waste Planning Region

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Solid Waste Needs Assessment

Prepared by:
The Upper Cumberland County Development District, and
Smith County, Tennessee
June 2010

as required by The Solid Waste Management Act (T.C.A. §68-211-811).

TENNESSEE DEPARTMENT OF ENVIRONMENT AND CONSERVATION
Division of Solid Waste Management
401 Church Street, 8th Floor
Nashville, TN 37243-1533

INTRODUCTION

The Solid Waste Management Act of 1991 requires that local governments comprehensively plan to manage their solid waste through modern, integrated, efficient systems. In order to assure that such planning is carried out on the solid Waste foundation of relevant and objective knowledge of local conditions, the Act requires that staff of the Development District coordinate, conduct and maintain a Needs Assessment of each municipal solid waste planning region. This assessment shall be revised every five years [T.C.A. 68-211-811].

The categories of information required are:

- Demographic information and projections;
- An analysis of economic activity within the Region;
- Characterization of the waste stream;
- Projection of solid waste generation;
- Evaluation of the collection systems for every municipality & county within the region;
- Evaluation of existing, new or expanded solid waste capacity and management facilities within the region;
- A statement of goals that are consistent with the state plan;
- An analysis of existing or potential waste flows within the region and between adjacent regions;
- A comparison of projected demands from waste generation & importation of waste with available and projected capacity and an identification of potential shortfalls in capacity; and
- Any additional information as the commissioner may require.

In order that the regional planning effort is implemented on a solid foundation of relevant and objective knowledge of local conditions, the Act requires the Development Districts to coordinate, conduct and maintain a Needs Assessment for each solid waste region. This Assessment shall be revised every five (5) years.

SECTION 1:**DEMOGRAPHIC INFORMATION AND PROJECTION**

Provide a table and chart showing the region's population for the last ten (10) years with a projection for the next five (5) years. Provide a breakdown by sub-table and sub-chart, or some similar method to detail all county and municipality populations. Discuss projected trends and how it will affect solid waste infrastructure needs over the next five (5) years.

Smith County, Demographics, Statistics and General Information:

Within Smith County there are three incorporated communities. As the county seat, Carthage is the center of local government and business activities and is the largest of the incorporated communities. South Carthage, which is located just across the Cumberland River from Carthage, developed primarily because of the railroad. Gordonsville, which encompasses the largest land area of the incorporated communities, is bisected by Interstate 40.

Smith County's population growth has been moderate for the past several years. This is primarily due to the large manufacturing job losses over several years. The growth that has occurred has been partially related to retirement and commercial development near I-40. Carthage and South Carthage are limited by physical geological barriers.

TABLE 1.1 Smith County Historic and Projected Population Trends (1996 thru 2015)

Year	Smith County	Carthage	Gordonsville	South Carthage	Unincorporated
1996	15,990	2,310	1,124	1,000	11,556
1997	16,415	2,295	1,169	1,018	11,933
1998	16,818	2,280	1,214	1,036	12,228
1999	17,311	2,267	1,259	1,054	12,731
2000	17,791	2,251	1,304	1,072	13,160
2001	17,958	2,246	1,300	1,086	13,321
2002	18,090	2,242	1,301	1,090	13,453
2003	18,204	2,232	1,301	1,105	13,556
2004	18,259	2,247	1,293	1,107	13,627
2005	18,459	2,217	1,307	1,118	13,798
2006	18,578	2,221	1,290	1,273	13,981
2007	18,795	2,256	1,311	1,282	14,103
2008	19,107	2,400	1,357	1,291	14,718
2009	19,800	2,400	1,362	1,320	14,810
2010	19,927	2,400	1,367	1,350	14,765

2011	19,711	2,400	1,382	1,380	14,765
2012	20,400	2,400	1,390	1,410	15,200
2013	20,900	2,400	1,400	1,440	15,660
2014	21,400	2,400	1,410	1,470	16,120
2015	21,900	2,400	1,420	1,500	16,580

Sources: Historic data are from the U.S. Census Bureau. Projections are based on data from the University of Tennessee CBER Data compiled by the Upper Cumberland Development District, 2010.

Economic Impact of Increasing Retiree Population

Smith County continues to be rated at one of America's Most Affordable communities and has been rated as the Most Affordable community. Low cost of living, low property taxes and a wide variety of activities create the ideal environment offering something for everyone.

Future Projections

Capital expenditures will include replacement of collection and hauling equipment, construction of collection sites, signage, attendant sundries, utilities, fencing and gates, to name a few. Additional expenses will be incurred by providing required center attendants at each site during hours of operations. In addition to upgrading county-wide collection sites, recycling and other waste reduction services will be added for residents to drop-off their household recyclable materials.

Funding sources, such as user and impact fees must be considered means to amass revenue, in combination with traditional funding mechanisms, to enhance services. Additional facilities will need to be constructed, such as solid waste and recycling collection drop-off site to accommodate increasing numbers of residents efficiently and safely, existing "green boxes" if any, none are located in Smith County at the time but, if "green boxes" existed, these sites must be phased-out, relocated or consolidated, and permitted as convenience center sits in compliance with state required design and operational standards.

Tourism Industry in Smith County

A small county with a scenic setting and proud historic legacy, Smith County is located within a comfortable drive from Nashville, Knoxville, or Chattanooga. The panoramic view of the Cumberland River and the beautiful and majestic hillsides from the historic Cordell Hull Bridge is well worth the drive!

Impact of Projected Trends

The current waste stream will be affected by demographic changes in a community. Industrial and commercial waste will fluctuate dramatically in direct relationship to the economy. Also, if a major industry opens or closes, the waste composition for a community may change. Natural disasters such as tornadoes can influence the composition of the waste stream. New residents may not only increase the quantity of local waste, they may have different waste generation patterns than current residents.

Population change as a result of net migration is unevenly distributed across the landscape. Rural jurisdictions face different demands for local goods and services and different opportunities for economic expansion, depending on population trends. Anticipating the types of areas that will receive large numbers of baby boomers in the near future could help communities plan for rising demands for housing, transportation, health care, and retail infrastructure.

Economic and social impacts from migration connect to broader age-related issues subject to debate at Federal and State levels. Places that emerge as migration destinations for Americans approaching or entering retirement today will be increasingly influenced by Federal policy decisions regarding Social Security adjustment, pension guarantees, workforce issues, and health care provisions, among others.

SECTION 2:

ECONOMIC ACTIVITY WITHIN THE REGION

Provide a table and chart showing the region's economic profile for all county and municipalities for the last ten (10) years with a projection for the next five (5) years. This can be accomplished by using the following economic indicators:

- *Taxable sales, property tax generation, and per capita income*
- *Evaluation by break down of each economic sector*
- *County or municipal budgeting information*
- *Other commonly accepted economic indicators*

data in item #2, show the Smith County economy has been and remains relatively weak. The county lost a large number of manufacturing jobs, but commuting to other areas has partially offset this development. Employment at the zinc mine at Gordonsville (a sometimes major source of income in the area) has been very volatile due to international market forces. Retail sales and bank deposit growth have been sluggish lately and fiscal capacity growth of area governments has been limited.

Total payroll employment in the county has been growing over the past eight years increasing from \$31,900 in 2000 to \$34,260 in 2008. But, as with taxable sales, this indicator turned negative in the last year. Major growth areas were Education and Health Services, and trade transportation and utilities.

Retail sales and bank deposit growth have been sluggish lately and fiscal capacity growth of area governments has been limited.

Smith County, Carthage, Gordonsville and South Carthage

PROPERTY TAX GENERATED

2000-2010

2000-	297,172,450
2001-	274,602,288
2002-	311,501,987
2003-	347,158,070
2004-	340,869,567
2005	339,654,319
2006-	380,999,116
2007-	390,580,974
2008-	395,291,897
2009-	398,325,901
2010-	399,725,967

2011-2015 PROJECTION

2011-	401,567,974
2012-	402,647,988
2013-	405,458,654
2014-	405,753,754
2015-	406,854,658

**Smith County, Tennessee
Solid Waste Disposal Budget
2009/10**

<u>Assets</u>		
Current Assets		
Equity in Pooled Cash and Investments	\$	247,963
Accounts Receivable	\$	148,665
Allowance for Uncollectible		(9,806)
Total Current Assets	\$	386,822
Non-current Assets		
Capital Assets		
Assets not Depreciated		
Land	\$	2,052,484
Assets Net of Accumulated Depreciation		
Landfill Facilities and Development	\$	1,913,088
Buildings and Improvements	\$	58,229
Machinery and Equipment	\$	647,634
Total Noncurrent Assets	\$	4,671,435
Total Assets	\$	5,058,257
<u>Liabilities</u>		
Current Liabilities		
Payroll Deductions Payable	\$	599
Accrued Leave-Current	\$	34
Accrued Liabilities for Landfill Closure/Post-closure Care Cost	\$	75,000
Capital Outlay Notes Payable	\$	77,778
Capital Leaves Payable-Current	\$	73,606

Other Loans Payable	\$	23,420
Total Current Liabilities	\$	250,437
Noncurrent Liabilities		
Accrued Liabilities for Landfill Closure/Post-closure Care Costs	\$	2,320,733
Capital Outlay Notes Payable	\$	544,444
Capital Leases Payable-Long-Term	\$	76,187
Other Loans Payable	\$	1,932,916
Accrued Leave-Long Term	\$	137
Other Long-Term Liabilities	\$	626
Total Noncurrent Liabilities	\$	4,875,043
Total Liabilities	\$	5,125,480

SECTION 3:

WASTE STREAM CHARACTERIZATION

Elaborate on the entire region's solid waste stream. Compare today's waste stream with anticipated waste stream over the next five (5) years. How will the total waste stream be handled in the next five (5) years? Include in this discussion how problem wastes like waste tires, used oil, latex paint, electronics and other problem wastes are currently handled and are projected to be handled in the next five (5) years. What other waste types generated in this region require special attention? Discuss disposal options and management of these waste streams as well as how these waste streams will be handled in the future. Include in this discussion how commercial or industrial wastes are managed. Also provide an analysis noting source and amounts of any wastes entering or leaving out of the region.

Regional Solid Waste Stream

Smith County provides compartmentalized recycling containers to resident's at all convenient site for the collection of cardboard, plastic, newspaper, newspaper, and plastic. The three (3) larger sites (Carthage, Gordonsville and Pope's Hill), accepts used oil, tires and metal. The county landfill accepts brush material where it is mulched and used in parks and recreation maintenance. Collections units for paint materials are accepted at the three (3) larger convenient sites and the county landfills Class I and Class III.

Smith County Solid Waste Department reported on the annual progress report the county recycled 92.91% of their waste stream for FY09. The healthy economy and residential growth projected for the region will result in the potential generation of more solid waste from the region. The Smith County Solid Waste Department is involved in every aspect of its recycling program; the departments are deeply devoted to the residents in reducing, reusing and recycling.

Anticipated Growth

Existing opportunities for waste reduction and recycling for the industrial, commercial, and residential sectors will offset some of this growth as will future innovations and market advantages in waste reduction. The extent of the growth in the waste stream and in the waste reduction opportunities will depend on the future health of the economy of the region. In order to reach a higher goal of recycling one of the most important key factors is the additional need for

recycling equipment grants, as it is with each and every solid waste department. Competition for the same grant awards are getting more challenging each and every grant year. If you ask, each and every solid waste department what their short falls are, I positive that they will all say grants, grants, grants.

Used Oil –Safety Kleen has been contracted to pickup and recycles used oil. The Solid Waste Department received a used oil grant from TDEC to purchase used oil equipment, now the county is able to heat facilities within the Solid Waste Department with a portion of used oil collected.

Gasoline Tanks – These items are not being collected and recycled due to the absence of a reliable market, however the region is endeavoring to locate a reliable market for these items in the near future.

Tires – The County contracted with **MAC Tire Recycling** for the pickup of used tires. No difficulties have been encountered other than the under reimbursement cost by the state to the local manifested tire management program.

Paint- In September of calendar year 2008 Smith County began a surplus paint drop-off and recycling program which has been well received. The paint facility employs four (4) people to collect, sort, mix and process useable material and to properly dispose of any un-useable material, which has been very successful in recycling and the sale of recycled paint.

Anti-Freeze- Is sent to Advanced Auto and picked up by an end-user.

Waste Stream Analysis over the Next 5 Years

The Smith County Landfill will be expanding the Class III landfill over a series of phases to accommodate the volume of waste received. The cost of landfill closure/post-closure care is allotted in the Smith County Solid Waste Department budget. The county anticipates moving the Defeated Convenience Site from its current location to another area in the county.

Smith County Landfill will be starting Phase II of Wright Track II of landfill along with Phase I of new Class III area of landfill.

Future monitoring costs include groundwater monitoring at the Class I and operation Class III/IV landfills. Landfill gas monitoring is also a reoccurring cost at the Class III/IV landfill. Smith County intends to place tri-recycling containers at Crump Paris Park, which is a sports complex for children and adults. If recycling grant is funded, Smith County will encourage each school to implement a recycling program and will continue to apply for grants to assist in the purchase of the necessary equipment to capture more recyclables.

The Table below summarizes how the region's total waste stream will be managed over the next five (5) years. Smith County and local businesses are listed separately to describe management methods and programs available for each sector.

Destination	Tons	(%)
Smith County Class III Landfill Kennedy Road Carthage, Tennessee	9,185.42	45.2
Smith County Landfill Class I Landfill Kennedy Road Carthage, Tennessee	5,205.65	34.2
Alan's Industrial Waste Services 238 Chandler's Mill Road Ridgley, Tennessee 38080	5,657.00	28.2
Total	27,162.2	100.0

Recycling Tonnage by Name, Sector, Source, 2009

Material Name	Residential All Programs	Commercial All Programs	Industrial All Programs	Other All Programs	Total
Corrugated	115.3	4,946.0	9,937.0		14,998.3
Dry Cell			1.0		1.0
Electronics	32.3				32.3
Ferrous			559.9		559.9
Industrial By-Products	50.4		4,012.0		4,012.0
Landscape and Agriculture	864.6				864.6
Latex Paint	392.0				392.0
Lead-Acid	10.0		3.0	83.5	96.5
Mixed #1 and #2		8.0	14.0		22.0
Mixed Metals	474.6	60,778.0	53.1		61,305.7
Mulch	182.5	712.0		4,454.5	5,349.0
Newspaper	89.2	54.0	45.0		188.2
Non-Ferrous		93,465.0	6,017.0		99,482.9
Other (1)		19.0			19.0
Other Plastics & Mixed Plastics	11.7				11.7
Sewer Sludge	102.3	1,143.0			1,515.3
Tires	199.1				199.7
Used Oil	24.0		60.0	6.7	90.7
Totals	2,548.5	161,395.0	20,702.9	4,544.7	189,191.1

SECTION 4:

REGIONAL COLLECTION SYSTEMS

Describe in detail the waste collection system of the region and every county and municipality. Provide a narrative of the life cycle of solid waste from the moment it becomes waste (loses value) until it ceases to be a waste by becoming a useful product, residual landfill material or an emission to air or water. Label all major steps in this cycle noting all locations where wastes are collected, stored or processed along with the name of operators and transporters for these sites.

Solid Waste and Recycling Collection Services

Smith County Recycling Center established by the Smith County Board of Commissioners. Smith County currently operates (6) convenience centers in the county. The convenience centers are operated by the county and trash is taken daily to the landfill, Smith County, Class I and Class III landfills, which is located on Kennedy Road, Carthage, Tennessee.

The amount and type of recyclable materials grows with each day of operations. The staff is dedicated and enthusiastic about waste reduction and the prospect of researching all potential end-use options and markets for any waste material generated. The energy amassed during the infancy of this program has been inspiring to anyone fortunate to tour the facilities, interview staff members and privileged to work with local leader's soliciting input on any new options, technologies, etc.

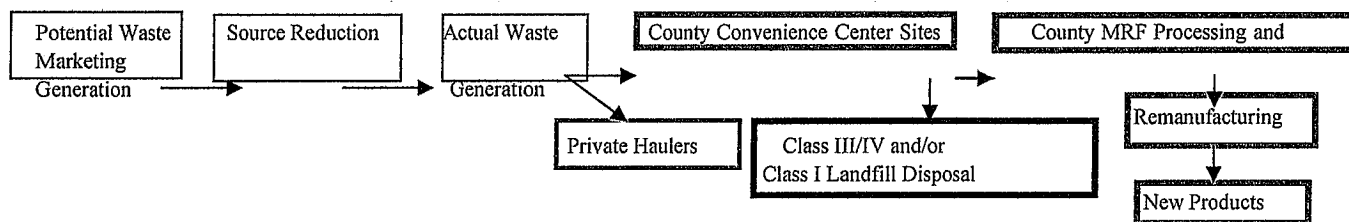
The used oil storage tanks, waste oil heater and light-duty used oil filter crusher have also been purchased with grant funds provided through the TDEC Used Oil Grant. A heavy-duty used oil filter crusher, used oil transfer pump and additional used oil containers were requested in the 2006/07 TDEC Used Grant Application with plans to provide a comprehensive approach for handling all used oil wastes and other automobile fluids.

Smith County Regional Solid Waste Life-Cycle

Theoretically, the life-cycle of Waste Generation in the Region follows the management options illustrated below. Potential waste generation can be reduced at the source through measures, such as residents reusing materials of remaining value. Manufacturers can also reduce residual waste by modifying internal operations to efficiently manage feedstock used for producing commodities. What remains is the Actual Waste Generation collected at the County Convenience Center Sites and/or collected by any private haulers.

At the County Convenience Center sites, solid and demolition waste is collected in separate containers for disposal in the respective landfills provided in local County landfill. The County also provides recycling containers for recyclable material that will be processed, marketed and remanufactured into new products. The value of recyclables is expressed in marketing sales paid to the County. Lastly, brokers and markets sell recyclable products to manufacturers producing

new products. (Adapted from Life-Cycle Study of Municipal Solid Waste Management, EPA, July 1995).



Smith County

The City Smith County and surrounding communities which include Carthage, South Carthage, Gordonsville and other unincorporated areas, currently operates a total of 6 convenience center sites and hours of operation are as follows:

Convenience Centers

Carthage (Hwy 25)

140 Dixon Springs Hwy.
Carthage, Tennessee 37030
615-735-9639
Monday thru Saturday 6:30 a.m. – 5:00 p.m.
Sunday 1:00 p.m. – 5:00 p.m.

Defeated (Devils Elbow)

210 Defeated Creek Hwy.
Pleasant Shade, Tennessee 37145
615-774-3394
Monday thru Saturday 6:30 a.m. – 5:00 p.m.

Helm's Bend

38 Helm's Bend Lane
Carthage, Tennessee 37030
615-735-6639
Monday & Tuesday 6:30 a.m. - 5:00 p.m.
Thursday thru Saturday 6:30 a.m. – 5:00 p.m.

Gordonsville

171 Lancaster Hwy.
Gordonsville, Tennessee 38563
615-683-6743
Monday thru Saturday 6:30 a.m. – 5:00 p.m.
Sunday – 1:00 p.m. – 5:00 p.m.

New Middleton

37 Grant Hwy.
Gordonsville, Tennessee 38563
615-683-2012
Monday & Tuesday 6:30 a.m. – 5:00 p.m.
Thursday thru Saturday 6:00 a.m. – 5:00 p.m.

Pope's Hill

524 Lebanon Hwy.
Carthage, Tennessee 37090
615-735-1544
Monday thru Saturday 6:00 a.m. – 5:00 p.m.
Sunday 1:00 p.m. thru 5:00 p.m.

Roadside Dumps Reported

<u>Location</u>	<u>List of Materials that makeup these roadside dumps</u>	<u>Tons</u>
Enigma Road	Household Trash, HHW, Animals, Appliances, Tires, Etc.	5,000
Horseshoe Bend	Household Trash, Tires, Appliances	5,000
Tanglewood Road	Household Trash, Tires, Appliances	3,300
Turkey Creek Road	Household Trash, Tires, Appliances	3,300
Dyer Branch Road	Household Trash, Tires, Appliances	3,300

The Smith County Landfill will be expanding the Class III landfill over a series of phases to accommodate the volume of waste received. The cost of landfill closure/post-closure care is allotted in the Smith County Solid Waste Department budget. The county anticipates moving the Defeated Convenience Site from its current location to another area in the county.

SECTION 5:

REGIONAL SOLID WASTE REDUCTION GOAL

The Solid Waste Management Act of 1991 states that all regions must reduce the amount of waste going into Class I landfills by 25%. Amendments to the Act allow for consideration of economic growth, and a "qualitative" method in which the reduction rate is compared on a yearly basis with the amount of Class I disposal. Provide a table showing reduction rate by each goal calculation methodology. Discuss how the region made the goal by each methodology or why they did not. If the Region did not met the 25% waste reduction goal, what steps or infrastructure improvements should be taken to attain the goal and to sustain this goal into the future.

TABLE 5.1 Measurement of Regional Waste Reduction Goal

County	Waste Reduction Goal Calculation Method			
	Compared to Base Year	Population Ratio	Economic-Population Ratio	Qualitative- Real Time
Smith	32%	32%	34.3%	92.91%
25% Waste Reduction Goal Achieved	Yes	Yes	Yes	Yes

Source: TDEC, Division of Solid Waste Management, Division of Solid Waste Assistance Program, 4/2010.

Variables Affecting Successful Regional Waste Reduction Efforts in Smith County

No significant setbacks have occurred. The County continues to encourage local businesses to participate in waste reduction activities and report figures to the Department. Annual outreach

and encouragement directly with appropriate business contacts is initiated by the Department. Landfill operations and management costs are increasing.

Many of the region's successes can be attributed to the public education programs on appropriate waste reduction, management, and disposal supplied by the Clean Commission and the Putnam County Solid Waste Department. These education programs not only encourage positive waste management habits by the public but also build a constituency that is willing to fund a more sound waste management.

Future Regional Waste Reduction Programs

Smith County will seek to increase recycling at the Smith County Convenience Sites, Smith County Schools and Crump Paris Park. Information will be posted on the Smith County Web Site and in the Carthage Courier about recycling and community cleanup efforts.

Transportation, disposal and management costs to support other facets of the waste utility industry are legitimate comparisons with the cost of providing other utilities to a modern society. Water, sewer, gas, etc. are considered necessary creature comforts for human beings. Trash management, and even environmental protection, such as water pollution control, is not considered an immediate personal comfort when the freedom to eliminate the waste can be easily and creatively practiced in the form of illegal dumping, burning or throwing trash in your own backyard without consequence.

The connection of properly containerizing waste, revering the long-term benefits of self-preservation and safeguarding necessary environmental resources for the continued existence of oneself have not been successfully internalized to produce significant behavioral changes. Conserving any resource, whether it be water, electricity or landfill space, is not practiced concurrently. However, Smith County will continue to encourage waste reduction behavior for both resident and businesses.

SECTION 6:

SOLID WASTE DISPOSAL CAPACITY

Provide a chart indicating current collection and disposal capacity by facility site and the maximum capacity the current infrastructure can handle at maximum throughput. Provide this for both Class I and Class III/IV disposal and recycled materials. Identify and discuss any potential shortfalls in materials management capacity whether these are at the collection or processor level.

Table A 10-year Regional Disposal Assurance in Smith County in 2009

Site Name(s)	Annual Tons Disposed by Smith County Region	Current Landfill Capacity (daily throughput)	Maximum Capacity	Projected Life of Facility
Smith County Class I	9,185.4	45.8	Depends on compaction rate, and Landfill Design and Operations Plan.	Not available at this time.
Smith County Class III	5,205.7	26.0	Depends on compaction rate, and Landfill Design and Operations Plan.	Not available at this time.
Alan's Industrial Waste Services	5,657.0	28.2	Depends on compaction rate, and operation plan.	Not available at this time.
Total Tonnage	20,048.1	100.0		

Sources: SW County of Origin Report Remaining Life Survey, Class III Landfill Sites in Tennessee, TDEC, Division of Solid Waste Management, April 2010

Recycling Tonnage by Name, Sector, Source, 2009

Material Name	Residential All Programs	Commercial All Programs	Industrial All Programs	Other All Programs	Total
Corrugated	115.3	4,946.0	9,937.0		14,998.3
Dry Cell			1.0		1.0
Electronics	32.3				32.3
Ferrous			559.9		559.9
Industrial By-Products	50.4		4,012.0		4,012.0
Landscape and Agriculture	864.6				864.6
Latex Paint	392.0				392.0
Lead-Acid	10.0		3.0	83.5	96.5
Mixed #1 and #2		8.0	14.0		22.0
Mixed Metals	474.6	60,778.0	53.1		61,305.7
Mulch	182.5	712.0		4,454.5	5,349.0
Newspaper	89.2	54.0	45.0		188.2
Non-Ferrous		93,465.0	6,017.0		99,482.9
Other (1)		19.0			19.0
Other Plastics & Mixed Plastics	11.7				11.7
Sewer Sludge	102.3	1,143.0			1,515.3
Tires	199.1				199.7
Used Oil	24.0		60.0	6.7	90.7
Totals	2,548.5	161,395.0	20,702.9	4,544.7	189,191.1

Smith County transfers solid waste generated from convenience center sites to the local Class I Landfill. Reported figures from the TDEC SW County of APR FY 2009 shows 20,048.1 tons of solid waste generated in Smith County is disposed at County Class III Landfill.

B. Provide a chart or other graphical representation showing public and private collection service provider area coverage within the county and municipalities. Include provider's name, area of service, population served by provider, frequency of collection, yearly tons collected, and the type of service provided.

Convenience Center Sites

Carthage	Lat 36.16.16.7 N	Long 85 58.16.3 W
Helm's Bend	Lat 36.13 44.6 N	Long 85 58 28.0 W
New Middleton	Lat 36.10. 32.8 N	Long 86 1.12.2 W
Defeated	Lat 36.19.22.7 N	Long 85.58 8.6 W
Gordonsville	Lat 36. 10 6.3 N	Long 85 54 31.7W
Popes Hill	Lat 36.15. 7 N	Long 86.214.9 W

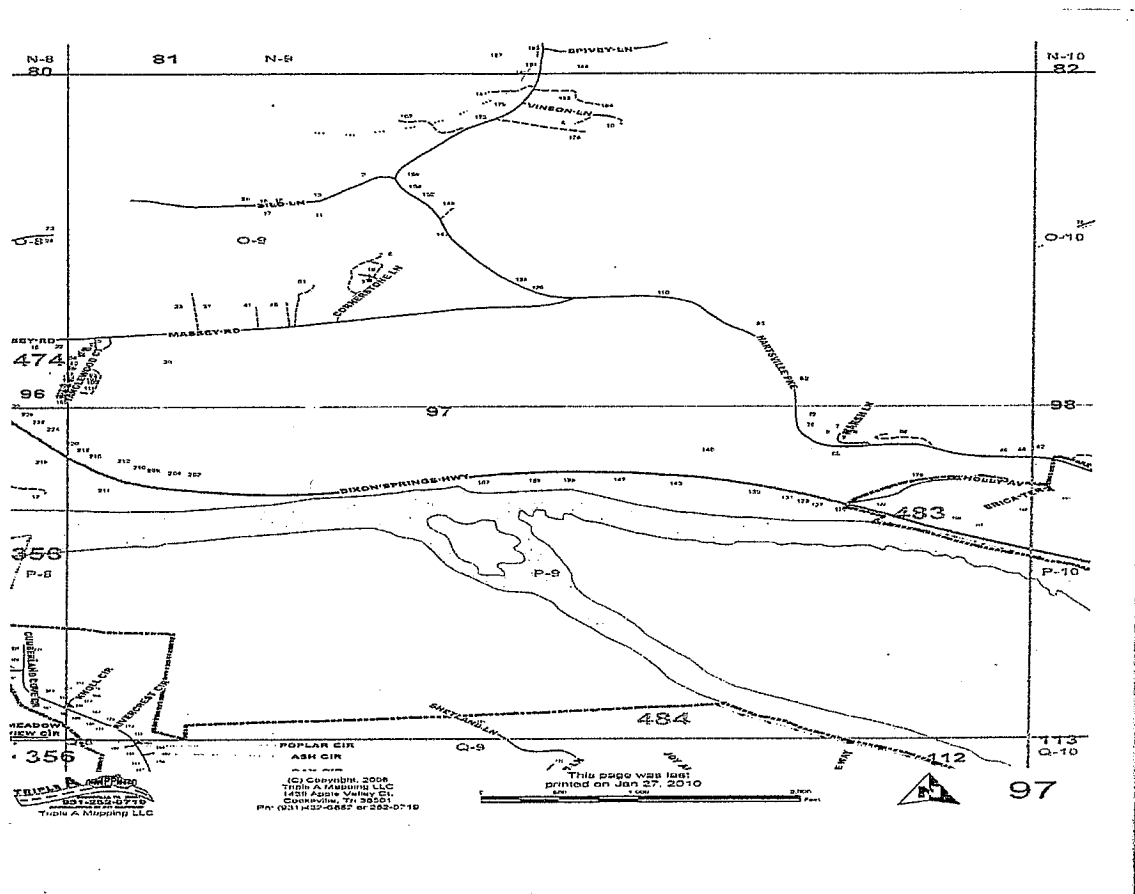


TABLE B Population Served for City and County Convenience Center Site, Provider, Service Area, Population Service, Tons Collected

Year	Smith County.	Carthage	South Carthage	Gordonville	Unincorporated
2009	19,800	2,400	1,320	1,326	14,810
Provider of Service	Service Area	Available Service for 2009 Population Total	Frequency of Service (Weekly, Bi-weekly, on call, etc.)	Estimated Annual Tons Collected	Type Service (Curbside, Convenience Center, Green Box) or Door to Door
	City and County-wide serving		5 days per week and Once weekly for some	Transfer station collects 152 tons of garbage a day. (County CC Sites-Class I Landfill)	CC Sites and/or Door to Door Services with subscription
Private Haulers*	County-wide	NA	Weekly	NA	Subscription Service

*Several private haulers operate waste collection service for residents and businesses in Cumberland County. Information on customers and areas served and tonnages collected is not available and considered confidential by the private sector.

SECTION 7:

SOLID WASTE MANAGEMENT INFRASTRUCTURE

Complete the chart below and discuss unmet financial needs to maintain current level of service. Provide a cost summary for current year expenditures and projected increased costs for unmet needs.

Description	Present Need \$/year	Total Needs (Present + Unmet) \$/year
Salary and Benefits	957,232	957,232
Transportation/hauling		
Collection and Disposal Systems		
Equipment		
Sites		
Convenience Center	198,718.00	181,718.00
Transfer Station		
Recycling Center		
MRF	659,035.00	659,035.00
Landfills		
Site	108,600	108,600
Operation	1,891,572.00	2,126,583.00

SMITH COUNTY			
Facility	Facility Betterments	Estimated Cost (2009)	Potential Revenue Source
Convenience Center Collection Site Development			
Planned Convenience Center Collection Site Construction	Site preparation, paving, fencing, gates, attendant sundries, utilities, equipment pads, signage etc.	\$50,000	Grants/General Fund Appropriation
Recycling and Existing Convenience Center Sites			
Recycling and CCC Site Upgrades	Asphalt paving, push-walls, cullet and storage bays, indoor/outdoor security system, building retrofits.	\$50,000	Grants/General Fund Appropriation
Multi-Purpose Waste Management Facility: repairs/maintenance, problem waste storage, etc.	Facility construction for waste management material handling; collection vehicles, heavy equipment, repair tools, repair parts inventory.	\$30,000	Grants/General Fund Appropriation
Total		\$130,000	

With additional employees, salary increases, facility operations, landfill monitoring costs, etc. Indirect costs are usually calculated based on the support services for solid waste management within local government departments, such as the offices of the executive, budget director, trustee, etc. Depreciation is a method of allocating the costs of capital outlays over the useful life of the resource purchased, such as equipment or facility development. Local governments should recognize annually the cost of support services and depreciation for all assets until they are fully depreciated when utilizing full-cost accounting to plan for future revenue sources.

However, for purposes of this Needs Assessment, to project the future costs of equipment and facilities, Future Outlays of equipment and facility expansions to support potential program growth over the next five (5) years, will be calculated to anticipate expenditures of cash in the future by amortizing annual costs.

Smith County will evaluate alternative revenue sources, such as user fees and waste management services expand to meet the growing needs of residents and additional state and federal regulations. Performing a full-cost accounting study, Smith County can:

- Determine the cost of solid waste management services;
- Adopt a more business-like approach to solid waste management;
- Improve methods of evaluating privatization initiatives;
- Determine an appropriate mix of solid waste management services for the future;
- Establish rates and user charges to fund services for the future.

In an effort to manage and reduce the amount and types of waste generated in an industrialized, "throw-away society," local governments plan to develop programs and construct collection and disposal facilities incrementally over time. The annual budget and the 4-year re-election process limit long-term planning to construct facilities to grow into and not out of over a longer time period than public officials are willing to risk.

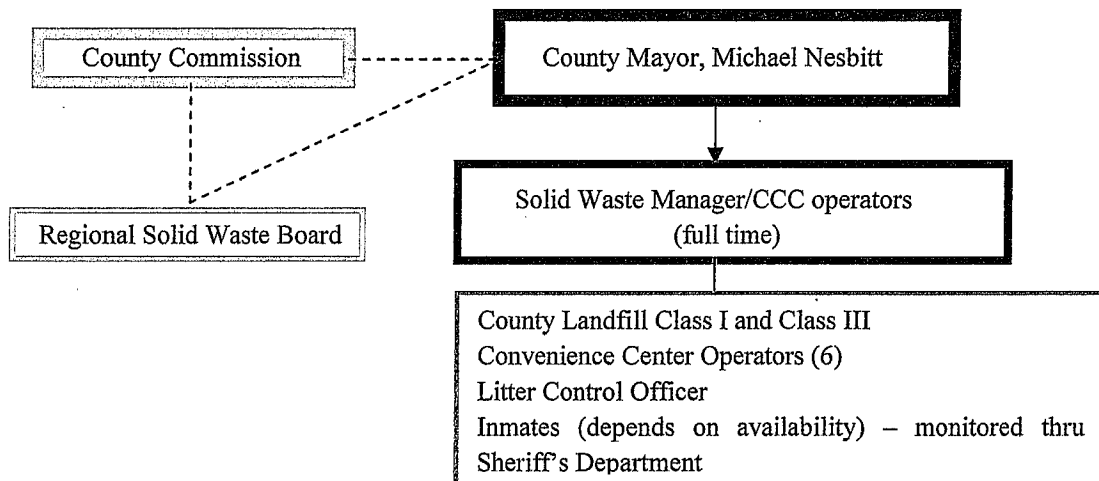
SECTION 8:

PUBLIC PARTICIPATION

Provide organizational charts of each county and municipality's solid waste program and staff arrangement. Identify needed positions, facilities, and equipment that a fully integrated solid waste system would have to provide at a full level of service. Provide a scale county level map indicating location of all facilities including convenience centers, transfer stations, recycling centers, waste tire drop-off sites, used oil collection sites, paint recycling centers, all landfills, etc. Identify any short comings in service and note what might be needed to fill this need.

The Solid Waste Manager is responsible for all solid waste and recycling daily operations in the County and answers directly to the Smith County Mayor. The solid waste board, County Commission and the Smith County Mayor evaluate program planning, budgeting and implementation.

Regional Solid Waste Organizational Structure



Convenience Centers

Carthage (Hwy 25)

140 Dixon Springs Hwy.
Carthage, Tennessee 37030
615-735-9639

Helm's Bend

38 Helm's Bend Lane
Carthage, Tennessee 37030
615-735-6639

New Middleton

37 Grant Hwy.
Gordonsville, Tennessee 38563
615-683-2012

Defeated (Devils Elbow)

210 Defeated Creek Hwy.
Pleasant Shade, Tennessee 37145
615-774-3394

Gordonsville

171 Lancaster Hwy.
Gordonsville, Tennessee 38563
615-683-6743

Pope's Hill

524 Lebanon Hwy.
Carthage, Tennessee 37090
615-735-1544

Roadside Dumps Reported.

<u>Location</u>	<u>List of Materials that makeup these roadside dumps</u>	<u>Tons</u>
Enigma Road	Household Trash, HHW, Animals, Appliances, Tires, Etc.	5,000
Horseshoe Bend	Household Trash, Tires, Appliances	5,000
Tanglewood Road	Household Trash, Tires, Appliances	3,300
Turkey Creek Road	Household Trash, Tires, Appliances	3,300
Dyer Branch Road	Household Trash, Tires, Appliances	3,300

SECTION 9:

Identify all current revenue sources by county and municipality that are used for materials and solid waste management. Project future revenue needs from these categories and discuss how this need will be met in the future. Use example in Chart 7 as an example to present data.

The Solid Waste Program of Smith County developed a 10-Year Plan for short and long-term solid waste services, as required by The Solid Waste Management of 1991. The Table below summarizes the existing programs, the 5-Year Update Program Plan, and the Tennessee Solid Waste Management Plan as required by the Act of 1991.

Equipment

The table below provides a list of the potential equipment for continued and expanded operations of an integrated solid waste management program provided by Smith County for the Region over the next five (5) years. Equipment is not listed in priority of need. Equipment costs are estimates only and should only be considered a baseline for future planning.

Equipment Description	A. Amount	B. Total Number Needed	C. Total Amount A - B - C
TUB GRINDER	\$250,000.00	1	\$250,000.00
TRASH COMPACTOR	\$30,000.00	1	\$30,000.00
COMPACTOR RECEIVER BOX	\$10,000.00	1	\$10,000.00
SHREDDER	\$12,000.00	1	\$12,000.00
ROLL-OFF TRUCKS	\$45,000.00	1	\$45,000.00
DUMP TRUCK	\$35,000.00	1	\$35,000.00
FORKLIFT	\$12,000.00	1	\$12,000.00
RECYCLING CONTAINERS	\$7,548.00	3	\$22,644.00
PAINT AIR PUMP	\$ 550.00	1	\$ 550.00
LAND AND SHELTER TO MOVE EXISTING CONVENIENCE SITE	\$55,000.00	1	\$55,000.00
TOTAL AMOUNT:	\$457,098.00	12	\$472,214.00

Facilities

Some examples of planned improvements and expansions to the solid waste management systems over the next (5) years include: Recycling Center asphalt paving, interior push-walls, glass cullet and material storage bays, building retrofits, indoor/outdoor security system.

A Multi-Purpose Waste Management Facility may be constructed within the next five (5) years to service equipment and collection vehicles and provide storage for non-hazardous problem wastes, such as latex paint and electronic waste.

The table on the following page provides a minimum list of the facilities for planned constructed and expanded, in no particular order. Cost estimates are only to be used as a baseline for planning purposes.

TABLE 9.2 Future Waste Management Facility Construction and Upgrades

SMITH COUNTY			
Facility	Facility Betterments	Estimated Cost (2009)	Potential Revenue Source
Convenience Center Collection Site Development			
Planned Convenience Center Collection Site Construction	Site preparation, paving, fencing, gates, attendant sundries, utilities, equipment pads, signage etc.	\$50,000	Grants/General Fund Appropriation
Recycling and Existing Convenience Center Sites			
Recycling and CC Site Upgrades	Asphalt paving, push-walls, cullet and storage bays, indoor/outdoor security system, building retrofits.	\$50,000	Grants/General Fund Appropriation
Multi-Purpose Waste Management Facility: repairs/maintenance, problem waste storage, etc.	Facility construction for waste management material handling: collection vehicles, heavy equipment, repair tools, repair parts inventory.	\$30,000	Grants/General Fund Appropriation
Total		\$130,000	

TABLE 9.3 Planned Solid Waste Management System 2007 – 2015

Solid Waste Program	Existing Regional Solid Waste Programs	Future Regional Solid Waste Programs	Tennessee Mandated Plan
Residential Solid Waste Collection	Smith County provides residential collection of solid waste at six (6) CC Sites. Private haulers provide collection/disposal services for local residents and businesses.	Continue County residential drop-off service. Maintain efficient collection equipment and facilities. Continue private hauling services.	County to provide CC Sites for residents according to population or service area, maintain required design and operational standards.
Recycling	Cardboard, newsprint, aluminum and steel cans, mixed paper, magazines, phonebooks, electronics, latex paint, used oil, scrap metal, plastic drink containers, waste tires, glass bottles,	Increase business and school recyclables collection. Expand types and amounts of materials collected at drop-off sites.	County to provide six (6) CC Sites and Class I landfill and Class III landfill.

	<p>waste tires and batteries.</p> <p>As a means of waste diversion, Class III/IV waste collected separately at each center and transported to the County Class III/ Landfill for disposal.</p>	<p>Expand Recycling operations to collect, manage, process additional materials types and amounts.</p> <p>Continue material processing maximizing available market prices.</p>	
Waste Reduction	<ul style="list-style-type: none"> Smith County collects recyclables from public and private sector, tracks business waste diversion activities. As a means of waste diversion, Class III waste collected separately at each center and transported to the County Class III Landfill for disposal. Exceeded 25% Regional Waste Reduction Goal. 	<p>Continue collecting recyclables from public and private sector, tracking business waste diversion activities to achieve 25% Regional Waste Reduction Goal. Continue waste disposal of Class III local County Landfill.</p>	<p>Continue achieving 25% waste reduction goal.</p>
Problem Waste Management	<p>Smith County provides collection at Convenience Center Sites for used oil and scrap metal.</p> <p>The County Recycling Center collects used oil, used oil filters, automobile fluids, e-waste, latex paint, waste tires.</p> <p>HHW TDEC mobile collection events to be scheduled.</p>	<p>Continue problem waste collection and expand service as needed.</p> <p>HHW TDEC mobile collection events to be scheduled.</p>	<p>County has restrictions related to disposal of tires, paint cans, refrigerators, freezer, fluids, and batteries. County to provide HHW collection events, when state scheduling is provided.</p>
Public Education & Information	<p>Smith County provides education activities targeting government, business, media, public, schools, and civic groups.</p>	<p>Increase educational activities to target government, business, media, public, schools, and civic groups.</p>	<p>Region to develop and implement solid waste management action plan for adults and children.</p>
Disposal	<p>Smith County transports waste collected at County convenience centers to the County Landfill for disposal in its Class III Landfill.</p>	<p>Continue to competitively negotiate long-term disposal contract.</p>	<p>Region to assure 10-year disposal capacity.</p>
Planning	<p>Monthly meetings with Regional Planning Board, County Executive, Sanitation Department and County</p>	<p>Continue monthly meetings, and reporting requirements.</p> <p>Forge partnerships between</p>	<p>Region to provide Annual Progress Reports, 5-Year</p>

	Commission to maintain plan updates, annual reports, etc.	government, business, media, civic, and public.	Plan Updates, other reporting requirements as needed.
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Sustainability of the Solid Waste Plan must include, at the minimum:

- Regional Planning Board Involvement;
- Expansions and Upgrades of Residential Collection Services and Facilities;
- Pursuing all Grant Funds for Equipment and Facilities;
- Utilize Technical Assistance Providers;
- Research Technologies and Other Program Options;
- Promote Other Waste Reduction Efforts;
- Expand Recycling Material Types and Amounts Collected;
- Garner Competitive Market Prices for Recyclable Materials;
- Provide Employee Work and Equipment Safety Training;
- Maintain Flexible Problem Waste Collection;
- Continue Aggressive Public Outreach, Education Program; and
- Expand Business and School Recycling Collection Program.

This list is neither conclusive nor listed in priority. Sustainability will depend on public, governmental and business sector response to produce desired outcomes for improving the infrastructure, as well as the health and welfare of all citizens in Smith County, including the city of Carthage, South Carthage, Gordonsville. The list is meant to be a work in progress that is sensitive and flexible to an unpredictable future of local needs, changing environmental regulations, the means to continue encouraging enthusiastic efforts of the Sanitation Department staff, and expand local participation when possible. A partnership between the County and City government officials is necessary to share the investment of a comprehensive community waste reduction program.

SECTION 10:

Describe current attitudes of the region and its citizens towards recycling, waste diversion, and waste disposal in general. Where recycling is provided, discuss participation within the region. Indicate current and on going education measures to curb apathy or negative attitude towards waste reduction. Are additional measures needed to change citizen's behaviors? If so, what specific behaviors need to be targeted and by what means?

Current and On-Going Education Measures to Increase Public Participation

Smith County will continue to incorporate the tools presented to influence positive attitudes and increase participation in the solid waste management programs. The County actively involves schools in education events; "Keep Smith County Beautiful" held a Cleanup Event on Martin Luther King Day, which targeted cleanup at several locations in Smith County. The 4th graders of Smith County receive Litter Educational Coloring Books, stickers and wrist bands, they also receive a grocery tote to take home to their parents to use instead of plastic bags and "Keep

Smith County Boo-tiful” trick or treat bags were given to children at the library to discourage littering.

Smith County intends to place tri-recycling containers at Crump Paris Park, which is a sports complex for children and adults. If recycling grant is funded, Smith County will encourage each school to implement a recycling program and will continue to apply for grants to assist in the purchase of the necessary equipment to capture more recyclables.

SECTION 11:

Discuss this region’s plan for managing their solid waste management system for the next five (5) years. Identify any deficiencies and suggest recommendations to eliminate deficiencies and provide sustainability of the system for the next five (5) years. Show how the region’s plan supports the Statewide Solid Waste Management Plan.

The State requires that a county provide a minimum level of service of there if less than 90 percent collection coverage provided by the private and public sector. This involves the establishment of convenience centers that are adequate to serve all residents.

The County continues to encourage local businesses to participate in waste reduction activities. Several workshops and presentations are scheduled annually to promote in-house waste reduction, environmental stewardship and support of the County recycling program. Additionally, some businesses are improving their operational costs through recycling income.

Through implementation of this comprehensive, updated solid waste management plan, Smith County will continue to provide for the efficient and environmentally sound management of solid waste, including waste disposal and waste reduction, for the next five (5) years.

Future Waste Management Equipment Needs

SMITH COUNTY			
Equipment	Operational Use	Estimated Cost (2009)	Potential Revenue Source
Haul Truck for Recycling Boxes	Material containerization.	\$40,000	Grants/General Fund Appropriation
Horizontal Baler	Material management.	\$15,000	Grants/General Fund Appropriation
Knuckle Boom Truck	Material containerization.	\$15,500	Grants/General Fund Appropriation
H.H.W.	Material Collection.	\$10,000	Grants/General Fund Appropriation
Waste Tire Collection Location	Material Collection.	\$6,000	Grants/General Fund Appropriation
Truck Weigh Scales / Software	Material Management.	\$10,000	Grants/General Fund Appropriation
Paint / Repair / Replace	Material containerization	\$12,000	Grants/General Fund Appropriation

Collection Containers			
Convenience Center Site Upgrades	Material Collection.	\$11,000	Grants/General Fund Appropriation
Total		\$119,500	

Future Waste Management Facility Construction and Upgrades

SMITH COUNTY			
Facility	Facility Betterments	Estimated Cost (2009)	Potential Revenue Source
Convenience Center Collection Site Development			
Planned Convenience Center Collection Site Construction	Site preparation, paving, fencing, gates, attendant sundries, utilities, equipment pads, signage etc.	\$50,000	Grants/General Fund Appropriation
Recycling and Existing Convenience Center Sites			
Recycling and CCC Site Upgrades	Asphalt paving, push-walls, cullet and storage bays, indoor/outdoor security system, building retrofits.	\$50,000	Grants/General Fund Appropriation
Multi-Purpose Waste Management Facility: repairs/maintenance, problem waste storage, etc.	Facility construction for waste management material handling: collection vehicles, heavy equipment, repair tools, repair parts inventory.	\$30,000	Grants/General Fund Appropriation
Total		\$130,000	

Planned Solid Waste Management System 2007 – 2015

Solid Waste Program	Existing Regional Solid Waste Programs	Future Regional Solid Waste Programs	Tennessee Mandated Plan
Residential Solid Waste Collection	Smith County provides residential collection of solid waste at six (6) CC sites. Private haulers provide collection/disposal services for local residents and businesses.	Continue County residential drop-off service. Maintain efficient collection equipment and facilities. Continue private hauling services.	County to provide CC Sites for residents according to population or service area, maintain required design and operational standards.
Recycling	Cardboard, newsprint, aluminum and steel cans, mixed paper, magazines, phonebooks, electronics, latex paint, used oil, scrap metal, plastic drink containers, waste tires, glass bottles, waste tires and batteries. As a means of waste diversion, Class I and Class III/IV waste collected separately at each center and transported to the County Class I and Class III/ Landfill for disposal.	Increase business and school recyclables collection. Expand types and amounts of materials collected at drop-off sites. Expand Recycling operations to collect, manage, process additional materials types and amounts. Continue material processing maximizing available market prices.	County to provide six (6) CC Sites and 1 Class I and Class III landfills.

Waste Reduction	<p>Smith County collects recyclables from public and private sector, tracks business waste diversion activities.</p> <p>As a means of waste diversion, Class I and Class III waste collected separately at each center and transported to the County Class I and Class III Landfill for disposal.</p> <p>Exceeded 25% Regional Waste Reduction Goal.</p>	<p>Continue collecting recyclables from public and private sector, tracking business waste diversion activities to achieve 25% Regional Waste Reduction Goal.</p> <p>Continue waste disposal of Class I and III/IV in the local County Landfills.</p>	Continue achieving 25% waste reduction goal.
Problem Waste Management	<p>Smith County provides collection at Convenience Center Sites for used oil and scrap metal.</p> <p>The County Recycling Center collects used oil, used oil filters, automobile fluids, e-waste, latex paint, waste tires.</p> <p>HHW TDEC mobile collection events to be scheduled.</p>	<p>Continue problem waste collection and expand service as needed.</p> <p>HHW TDEC mobile collection events to be scheduled.</p>	<p>County has restrictions related to disposal of tires, paint cans, refrigerators, freezers, fluids, and batteries.</p> <p>County to provide HHW collection events, when state scheduling is provided.</p>